

What is Claimed Is:

1. An ophthalmic, night vision formulation, comprising:  
a sterile aqueous carrier; and  
a therapeutically effective amount of a pharmaceutically active compound  
characterized by its ability to contract a pupil of a human patient's eye so that the  
5 pupil is twice the size or less in dim light as compared to its size in bright light.
  
2. An ophthalmic formulation comprising:  
an aqueous solvent; and  
an alpha 1 antagonist.  
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3. The formulation of claim 1, wherein the alpha 1 antagonist is  
selected from the group consisting of a phenoxybenzamine and a phentolamine.
  
4. The formulation of claim 1, wherein the alpha 1 antagonist is  
15 present in a concentration in a range of from about 0.01 milligrams per cubic  
centimeter of solvent to about 50 milligrams per cubic centimeter of solvent and  
wherein the solvent comprises an ophthalmic artificial tear solution.
  
5. An eyedropper, comprising:  
20 a hollow cylindrical barrel comprising a first end, a second end, and an  
inner surface;  
a means for providing suction to draw an aqueous formulation into the  
hollow cylinder barrel, the first end of the barrel configured to receive the means  
for providing suction to draw the formulation, the barrel having a small opening at  
25 the second end configured to permit passage of the formulation;

wherein the formulation comprises an aqueous solvent and an alpha 1 antagonist.

6. The eyedropper of claim 5, wherein the inner surface of the barrel  
30 surrounds a volume of five cubic centimeters or less.

7. A method, comprising:  
administering to an eye a formulation comprising an alpha 1 antagonist in an aqueous solution; and

35 allowing the formulation to contract pupil diameter in dim light to a diameter twice or less pupil diameter in bright light.

8. The method according to claim 7, wherein the optimized pupil diameter in dim light is no more than 5 mm and the pupil diameter in bright light is constricted no more than 1 mm.

40 9. The method according to claim 8, wherein said optimized pupil diameter in dim light is between and including 3 mm and 5mm.

10. A method for optimizing pupil diameter in dim light by minimizing its dilatation in response to less light, comprising administering a  
45 therapeutically effective amount of an alpha 1 antagonist to an eye of a person in need thereof.

11. The method according to claim 10, wherein said dilatation of the pupil diameter in dim light is minimized in response to less light compared with bright light, and wherein said method does not induce ciliary muscle contraction.

12. The method according to claim 7, wherein the eye is of a patient which suffers from excessively large pupils in dim light.

13. The method according to claim 12, wherein the patient suffers from poor quality of vision.

5 14. The method according to claim 7, wherein the eye is of a patient undergoing medication that results in dilatation of the pupil diameter.

15. The method according to claim 7, wherein the eye is of a patient that is naturally excessively dilated as a result of response to dimming of light.

10 16. A method of treatment, comprising:  
subjecting the eye of a human patient to refractive surgery;  
allowing the eye of the patient to recover; and  
administering to the patient a formulation comprised of an alpha 1 antagonist wherein the formulation is a liquid formulation applied directly to the  
15 eye of the patient.

17. The method of claim 16, wherein the formulation is applied by means of an eye dropper.

20 18. The method of claim 16, wherein the refractive surgery is a surgical means selected from the group consisting of incision, laser ablation, and prosthesis implantation.